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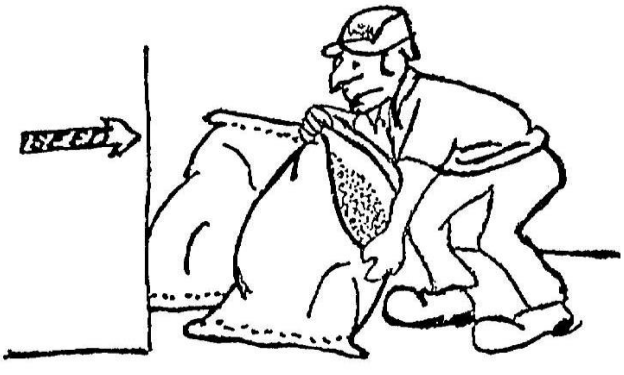
The Crops Contest Integrates Knowledge of Agronomy Into Three Basic Categories

Preparation for crops contests teaches identification and evaluation of crops for quality relative to certification, viability and marketing. Students learn in great depth many skills that can be valuable regardless of their chosen profession in agronomy. A misconception of many is that you must want to be a grain grader to benefit from crops contest training. Such is not the case, as much can be learned which can supplement any field of crop sciences.

GRAIN GRADING

Grain grading skills provide students with the ability to recognize crop products for their market worth and involves knowing defects that reduce quality. Grading provides a basis for marketing and provides quality control over grain products, thus determining their ultimate use.

PLANT AND SEED IDENTIFICATION



Training for this section enables one to develop essential skills used for inspecting and evaluating crops. Weed control and crop production practices often require proper plant and seed identification for making good management recommendations.

SEED ANALYSIS

Crops grown from pure seed maintain genetic purity and good quality. Seed analysis is a means of determining the value of seed for planting and for market, thus providing a guide for all using crop seed.

Regional Contests

The following regional contests are planned for the fall of 2025:

Upper Midwest Region, TBD — Dawn Lee, Coordinator

Central Region, TBD — Rachel Veenstra, Coordinator

If interest dictates, the location may change per the wishes of interested personnel in the respective regions. Additional schools are encouraged to participate. Contests are usually held about the end of October. Specific arrangements for each contest are left to the discretion of the coordinator. If you or your school are interested in a regional contest or the national contests, please contact the coordinator nearest your location or the secretary of the Coaches Committee whose address appears on the cover.

American Royal Kansas City Collegiate Crops Contest
Sponsored by Corteva Agriscience

The contest will be held on Tuesday, November 18, 2025, at the National Grain Center, 10383 North Ambassador Drive, Kansas City, MO.

Superintendent of the contest is Eric Fabrizius, Kansas Crop Improvement Association, Manhattan, KS. Assistant Superintendents are Jeri Geren, Geren Farms, Altamont, KS, and Hannah Glass, Sterling Seed, Garden City, KS.

Seed analysis samples are prepared by the South Dakota Seed Testing Laboratory. Grain grading samples are prepared by USDA-AMS-FGIS, Board of Appeals and Review, Kansas City.

A tour covering a variety of businesses in the Kansas City area provides an educational look at the agribusiness located there. Visits have included National Grain Center/Federal Grain Inspection Service, Best Harvest Bakery, Innerspace Storage/AGCO Equipment Co, The American Royal, Federal Reserve Bank, The Roasterie, Sporting KC Arena, Royals Stadium, Ingredion, DeLong Company, Guetterman Brothers Farms, Deveron, John Deere, Bartlett Company, Bayer Crop Science, and others. Each firm provides an excellent program which explains their operation and function.

The sponsors, whose names appear on this page, host the contestants and coaches at activities, support the tour, and provide the awards. All American Certificates are awarded to individuals scoring 95% or above by the American Society of Agronomy. Results are announced in CSA NEWS. Sponsors and the American Royal provide $2000 in team scholarships to the top five teams.

Sponsors:

- Corteva Agriscience
- American Royal Association
- American Society of Agronomy
- CHS Foundation
- South Dakota Crop Improvement
- Association of Official Seed Analysts

Chicago Collegiate Crops Contest
Sponsored by CME Group

The contest will tentatively be held on Friday, November 21, 2025, at the Loyola University Water Tower Campus, 25 E Pearson St., Chicago, IL.

Superintendents of the contest is Dan Smith, University of Wisconsin Extension.

Seed analysis samples are prepared by the South Dakota State Seed Testing Laboratory.
Grain grading samples are prepared by USDA-GIPSA-FGIS Field Office Staff, Kansas City.

Team contestants and coaches meet for an educational tour in Chicago on Friday prior to the contest as arranged by the contest hosts and the Coaches' Committee. Teams often schedule their own agriculture industry tours during their travel from Kansas City to Chicago, and visit various historical and cultural sites in downtown Chicago during the days leading up to the contest.

The sponsors of this contest, whose names appear on this page, support costs associated with conducting the contest and the awards banquet, and provide suitable awards to team and individual winners. All American designation is given to individuals scoring 95% or above by the American Society of Agronomy. Results are announced in CSA NEWS. Scholarships in the amounts of $2000, $1500, $1000, $750 and $500 are presented to the first through fifth place individuals, respectively, by CME Group.

Sponsors:

- CME Group
- Society of Commercial Seed Technologists (SCST)
- Crop Science Society of America

General Rules

1. The plan of the contest and all rules included herein are official for the contest. They may not be modified or supplemented until at the next official coaches meeting. The secretary shall correct typographical errors.

2. Institutions entitled to send competing teams: Agricultural colleges and schools of similar rank and purpose in the United States and Canada. Other international teams may compete upon request and approval by the Coaches Committee.

3. Eligibility of students: Three regular members selected from undergraduate students of good standing shall represent an institution. Students who have a Bachelor's Degree in Agricultural or Biological Sciences are not eligible to participate in the contest. Alternate(s) may accompany the team if desired. A maximum of three alternates per team may participate in grain grading and seed analysis, providing space is available. Any number of alternates may participate in identification only. A contestant may compete another year provided he/she as an individual did not place fifth or higher in either entire contest. Students must be registered as full time students, i.e. 12 hours.

4. Certification by a responsible school official of the eligibility of the students from which the team will be selected must be in the hands of the superintendent of the contest on the day of the contest. The student's name, his/her classification, and the number of hours he/she is carrying must be included. Coaches should bring a copy for each contest.

5. The coaches shall meet at the site of the contest in both Kansas City and Chicago at 7:00 the morning of the contests for set up. Contestants shall report to the Superintendent at 8:00 the day of the contests in both Kansas City and Chicago.

   It shall be the duty of the Coaches Committee Vice-Chairman to supply all copies of the official forms (labeled A-1, A-2, A-3, B-1, etc.) for identification and seed analysis for both contests in Kansas City and Chicago. It shall be the duty of the Secretary to supply extra ID mounting sheets, and the Chairman to provide envelopes for seed analysis, if requested.

6. The contests will be divided into three groups: (a) commercial grain grading (8 samples); (b) seed analysis (10 samples); and (c) identification (200 samples).

7. A list of the plants, seeds, and diseases which may be included in the identification group is attached, and constitutes a portion of the rules and regulations.

8. The list of materials from which selections may be made for the seed analysis and grading groups follows and is a part of the rules and regulations.

9. It shall be the duty of the Coaches to supply, without charge, such materials as may be needed for the contest.

10. No communication with other contestants or anyone else except the superintendent and assistant superintendent will be permitted while the contest is underway, and at no time with other members of the team or the coach.

11. It is permissible for the contestant to take into the contest any ordinary equipment for making hand separations such as small containers, sheets or cards for picking surfaces,

and forceps. Any other equipment for making separations other than specially prepared boards for separation of soybean splits shall be approved by a majority of the Coaches Committee in attendance prior to the contest. Sieves of any type are prohibited. Copies of the Official Rules and Regulations shall not be taken into the contest. Only information pertaining to the grading of grain may be added to the Handbook of Official Grain Grading Standards for use by contestants during the contest. Grain grading worksheets are included with the official contest forms and will be supplied to the contestant. Students may design and bring their own grain grading worksheets. Electronic calculators may be used in the contest. Hand-held, battery-powered-illuminated magnifiers may be used by contestants. Timers are allowed in any event, but must not be set for intermittent warning beeps during the 1.5-hour official contest time or they will be confiscated. Timers may only beep at the end. Shielded desk lamps for seed analysis may be provided by schools. Schools must provide electronic balances for grain grading.

12. Legible writing is important and the judges will consider this factor in determining scores including the proper use of capitals, hyphens, apostrophe, and separation of words.

13. In case any contestant who competes in part of the contest is unable to continue and is replaced by an alternate, the team shall automatically be placed not higher than fourth. Any regular member of the team who makes a score which entitles him/her to individual awards shall receive such awards.

14. Infraction of the rules shall be followed by penalties varying from subtracting points to dismissal from the contest.

15. All identification specimens shall remain in place until all the contest papers are graded.

16. The Superintendent of the contest shall notify contestants of the time remaining at 45 minutes, 30 minutes, 15 minutes, 10 minutes, 5 minutes, and 2 minutes.

17. A university or college may participate as non-scored individual student or team participants in one, two, or three phases of the contest.

18. Each coach should leave ID samples (30 plants and 30 seeds) along with eligibility letters for the Kansas City contest at the hotel front desk by 8:00 am on Monday before the tour. Coaches should bring ID samples (30 plants and 30 seeds) along with eligibility letters for the Chicago contest to the Superintendent at the hotel on Thursday night. If you cannot provide samples on Thursday night, please leave them along with eligibility letters at the front desk of the hotel by 7:00 am Friday morning, or send them with another team.

19. No cell phones, smart watches, fitbits, IPads, or other wireless communication devices are allowed during the contest, **including during breaks between sections**.

Commercial Grain Grading (Group A)
Special Rules

1. Time — one and one-half hours. Value — 600 points. (Eight samples - 75 points per sample.) (No more than 75 points may be deducted per sample.)

2. Material — eight samples of grain shall be selected from barley, corn, wheat, oats, rye, sorghum, and soybeans. No more than three samples of any one grain may be included in the contest, e.g. 3 wheat samples, 3 corn samples, 3 soybean samples. A master sample of each grain shall be shown. Packets containing 30 grams for wheat, oats, rye, sorghum, and barley; 100 grams for soybeans; and 200 grams for corn shall be furnished each contestant in lieu of the amounts required for official grade determination. Grain in packets provided to students shall be dockage free. The kind of grain for each sample will be listed on packets and given information.

3. Information on test weight per bushel, moisture content and odor for each sample, and values which must be determined on samples larger than those supplied in the contest, such as for sieved quantities, special grades, sample grade factors, and dockage shall accompany the packets furnished to each contestant. Live insects found in the samples shall be disregarded. General appearance factors ordinarily determined by observations must also accompany the packets. Any material in the packets which might function as special grade or sample grade factors that are not kernels of the grain being graded must be picked and added to foreign material (i.e., ergot bodies, stones, crotalaria seeds, etc.), and shall not be considered in determining special grades or sample grade. Sample grade odors must be given only as musty, sour or commercially objectionable foreign odor.

4. Values for grading which must be determined by actual separation, including any factor which involves a hand-picked component and including class mixtures and subclass determinations in wheat, shall deviate from any limit by at least one-fourth of the interval between the adjacent limits. Percentages of hard and vitreous kernels may accompany the packets when desired. If information for any factor is given, then that factor will not be added to the hand-picked portion. For example, if heat damaged soybeans is given information, then heat damaged soybean seeds will not appear in the hand-picked portion.

5. Commercial grades shall be designated in the manner followed in commerce according to the Inspector's Manual. Abbreviations are not acceptable. The factor or factors which determine the numerical grade, excepting Grade No. 1 or special grades, must be stated. To record grading factors where more than one grade has the same percent limit e.g. (heat damaged wheat for grades 1 and 2 is 0.2% and contrasting classes is 10% for grades 4 and 5) record the lower grade only if another grading factor such as TW, FM, or DKT is also graded at the lower limit. Official FGIS standard abbreviations may be used for listing any factor(s) determining the grade (see p. 9), including sample grade factors and appearance factors. Each contestant will be permitted to make separations in the grading of grain. Each contestant must provide his/her own copy of the Grain Standards Handbook. Electronic or torsion balances will be provided by coaches. If a team travels by air, they may need to arrange with another coach to bring an extra balance for their use.

6. The sub-classes, White Club Wheat and Western White Wheat; and the class, Unclassed Wheat; and the special grades, Treated Wheat and Mixed Grain, shall not be included in Grain Grading. Tannin Sorghum and the special grades Flint Corn, Flint and Dent Corn,

Bleached Oats and Waxy Corn may be used as a given factor in Grain Grading. Wheat sub-class determinations must be made by the contestant, when percentages of hard and vitreous kernels do not accompany packets.

7. Optional grade designations will not be included in grain grading.

8. Triticale, Hard Red Spring, Hard Red Winter, and Soft Red Winter Wheat will not be mixed together in base samples of Rye, White Wheat and Durum Wheat, although each may be added individually. When triticale or any of the red vulgare wheats are to be considered as a class mixture in a base sample of another red vulgare wheat, the percentage will be given. The base samples of red vulgare wheat must be typical of the market class. Red durum wheat will not be used in grain grading. When Hard White Wheat is to be considered as a class mixture in a base sample of Soft White Wheat or Amber Durum Wheat, and vice versa, the percentages of the mixture will be given.

9. Heat damaged barley, heat damaged oats, heat damaged rye, sick wheat, sick rye, injured by mold, injured by heat, and injured by frost damage in barley, green soybeans, stink - bug stung kernels in soybeans, bicolored soybeans, excessive smut, large stones, wreckage, diatomaceous earth, and commonly recognized harmful or toxic substances will not be used as factors in grading. This does not prohibit the factor heat damage in barley, oats and rye when the damage is other grains. Two-rowed and six-rowed barley will not be mixed.

10. The following information will accompany the packets for barley grading: Suitable malting type, aleurone color, all barley damages, broken kernels, and skinned and broken kernels.

11. All oat damages must accompany the packets for oat grading.

12. Green damaged soybeans and soybeans damaged due to heating must be given for soybean grading.

13. A maximum of 4 factors may be used to determine the numerical grade in grain grading.

14. Other grains and foreign material added to the grain grading samples must be a suitable representation from the identification list.

15. Information in the Grain Inspection Handbook - Book II, Grain Grading Procedures from Tables on 1) Certifying Percentages and Test Weight, 2) Basis of Determination, 3) Insect Infestation, 4) Sample Grade Factors, 5) Contrasting Classes (wheat only), and 6) IDK determination (wheat only) should be added to student's Grain Grading books and will be used in the contest. Tables included are:
Chapter 1 General Information - Table 5; Wheat - Tables 2, 4, 5, 7 and 8; Barley - Tables 4, 6 and 7; Corn, Sorghum, Soybeans, Oats, and Rye -Tables 2, 4, and 5.

    Images of GG damages may be included in student's Grain Grading books and/or FGIS Grain Grading mats may be used during the Grain Grading portion of the contest.

    For References, the Grain Inspection Handbook - Book II, Grain Grading Procedures can be located at: https://www.ams.usda.gov/sites/default/files/media/Book2.pdf. The interactive resources site at: https://www.ams.usda.gov/resources/interactive-resources has both "eBooks" and "eLearning" sections with resources including Grain Grading Tutorials for grading each type of grain, with images of interpretive line slides. A complete book of Visual Reference Images can be located here. The abbreviated US Standards are located at https://www.ams.usda.gov/grades-standards/grain-standards

Scoring System for Grain Grading Score Cards (75 points each)

Grade		-10 for each grade off (max -30). Numerical grade must be written in grade designation area on answer card (if numerical grade is omitted but is correct in table -10; if numerical grade is omitted but one grade off in table -20)
Crop	Omitted	-5
Class	Wrong	-10 (except -5 for Durum Wheat, Hard Red Spring Wheat, and Barley)
Subclass	Wrong	-5 (applies to Durum Wheat, Hard Red Spring Wheat, and Barley)

Determining Factors - Must be written out (or use official FGIS standard abbreviations) in the determining factors area on answer card.

One factor	1 Wrong -24			
Two factors	2 Wrong -24	1 Wrong -12		
Three factors	3 Wrong -24	2 Wrong -16	1 Wrong -8	
Four factors	4 Wrong -24	3 Wrong -18	2 Wrong -12	1 Wrong -6

When more factors are given than are actual, score on the basis of number of factors given by the contestant. For example, if four factors are given by the contestant but two are actual, deduct 12. Standard abbreviations for table factors are listed below*. Official abbreviations for sample grade and appearance factors may also be used (ANFL, BADW, CBUR, COFO, FSUB, HTG, IDK, SLW, TOM, etc.).

Table Factors – minus 3 points for each wrong box. Recorded by placing appropriate numerical grade in "Grade Box" at the bottom of each factor column on the answer card. All boxes must be filled in with appropriate grade, including number 1. Each box will be scored as correct or incorrect against the grade level on the key. The number of grades off does not matter. Area marked "Level" is for contestant to record data and make calculations. It will not be scored. Record sample grade factors as "SG," "Sample," or "Sample Grade." For grading factors disregarded if Mixed class (ie. SBOC, CCL, WOCL) record “N/A”, “X”, leave blank, or write “Mixed” in box. For WOCL in Durum wheat, record “N/A”, “X”, or leave blank.

Additional Deductions:

- Special grades deduct 5 points for each one omitted or wrongly added.
- Deduct 5 point is Flint Corn % not listed (i.e. Flint and Dent, Flint Corn 7%) (round to whole number)
- Dockage deduct 5 points if omitted or wrong value. If dockage is 0.0% don't list for all crops except wheat and rye. If listed, deduct one point. For wheat and rye a measurable amount of dockage which rounds to 0.0% is listed as 0.0%. If not listed, deduct one point.
- When Light Garlicky is stated for Garlicky, or Light Smutty for Smutty, deduct only 5 points.
- Improper order of special grades (not alphabetical), deduct a maximum of 2 points.
- Special grades or dockage wrongly written, deduct 1 point for each infraction.
- Incorrectly written grade (commas, abbreviations, capitalization errors), deduct 1 point for each infraction (maximum of 2 points).
- Incorrectly written determining factors, deduct 1 point for each factor.
- No deduction is made with regard to the order of writing numerical and sample grade determining factors.
- For samples grading U.S. No. 1, the correct determining factor is "None" or the box is left blank.

*STANDARD ABBREVIATIONS FOR DETERMINING FACTORS ALLOWED ON SCORE CARDS

BCFM	Broken Corn and Foreign Material	SBLY	Sound Barley
BN	Broken Kernels	SHBN	Shrunken and Broken Kernels
BNFM	Broken Kernels and Foreign Material	SKBN	Skinned and Broken Kernels
CCL	Contrasting Classes	SO	Sound Oats
DEF	Defects (Total)	SPL	Splits
DK	Damaged Kernels	SMT	Suitable Malting Types
DKT	Damaged Kernels (Total)	THIN	Thin Barley, Thin Rye
FM	Foreign Material	TW	Test Weight Per Bushel Wild
FMOW	Foreign Matter Other Than Wheat	WO	Oats
HT	Heat-damaged Kernels	WOCL	Wheat of Other Classes
OG	Other Grains		

Official abbreviations for any sample grade factors and any other grade determining appearance factors may also be used, but must be written exactly per FGIS standards.

List From Which Material Will Be Selected For Commercial Grain Grading (Group A)

Wheat: Hard Red Winter, Soft Red Winter, Hard Red Spring, Durum, Soft White, Hard White, and Mixed Wheat.

Corn: White, Yellow and Mixed Corn, excluding stripe corn.

Oats: Any variety or type of cultivated oat.

Rye: Any rye variety or type.

Sorghum: Sorghum, White Sorghum, Tannin Sorghum, and Mixed Sorghum.

Soybeans: Yellow or Mixed Soybeans, excluding bicolored soybeans.

Barley: Any variety or type of cultivated barley.

Correct form and order for writing grade, special grade and factors in grain grading is given below. Any deviation from these examples will result in points taken away. Only grain grading factors listed under the factors of each crop will be allowed in the contest. Special grades shall be written in alphabetical order.

Wheat

Example: U.S. No. 2 Soft White Wheat, Ergoty, Garlicky, Infested, Light Smutty, Dockage 1.3%
Example: U.S. No. 3 Dark Northern Spring Wheat, Smutty, Dockage 0.0%

Factors:

Test Weight Per Bushel	Heating
Heat-damaged Kernels	Musty
Damaged Kernels (Total)	Sour
Foreign Material	Stones
Shrunken and Broken Kernels	Castorbeans
Defects (Total)	Crotalaria
Contrasting Classes	Glass
Wheat of Other Classes (Total)	Animal Filth
Insect Damaged Kernels	Commercially Objectionable Foreign Odor
Total Other Material	Unknown Foreign Substance

(Wheat of Other Classes is not a factor in Durum wheat – in the box on the answer form write "N/A", "X", or leave blank)

Corn

Example: U.S. No. 2 Mixed Corn, Flint, Infested, Waxy
Example: U.S. Sample Grade Yellow Corn, Flint and Dent, Flint Corn 15%, Infested

Factors:

Test Weight Per Bushel	Animal Filth
Broken Corn and Foreign Material	Glass
Damaged Kernels (Total)	Castorbeans
Heat-damaged Kernels	Cockleburs
Commercially Objectionable Foreign Odor	Crotalaria
Sour	Heating
Unknown Foreign Substance	Musty
	Stones

Oats

Example: U.S. No. 2 Bright, Extra-Heavy Oats, Bleached, Ergoty, Garlicky, Infested, Smutty
Example: U.S. No. 3 Heavy Oats, Thin

Factors:
- Test Weight Per Bushel
- Sound Oats
- Heat-damaged Kernels
- Foreign Material
- Commercially Objectionable Foreign Odor
- Slightly Weathered
- Wild Oats
- Materially Weathered
- Animal Filth
- Badly Stained
- Musty
- Sour
- Crotalaria
- Heating
- Stones
- Glass
- Castorbeans
- Cockleburs
- Unknown Foreign Substance

Rye

Example: U.S. No. 2 Plump Rye, Ergoty, Infested, Light Garlicky, Light Smutty, Dockage 1.2%
Example: U.S. No. 3 Rye, Garlicky, Smutty, Dockage 0.1%

Factors:
- Test Weight Per Bushel
- Damaged Kernels (Total)
- Heat-damaged Kernels
- Foreign Material (Total)
- Foreign Matter Other Than Wheat
- Thin Rye
- Commercially Objectionable Foreign Odor
- Unknown Foreign Substance
- Sour
- Musty
- Glass
- Crotalaria
- Animal Filth
- Heating
- Stones
- Castorbeans

Sorghum

Example: U.S. No. 2 Tannin Sorghum, Infested, Smutty, Dockage 1.0%
Example: U.S. Sample Grade Sorghum, Infested, Smutty

Factors:
- Test Weight Per Bushel
- Damaged Kernels (Total)
- Heat-damaged Kernels
- Commercially Objectionable Foreign Odor
- Broken Kernels and Foreign Material
- Foreign Material
- Heating
- Distinctly Discolored
- Unknown Foreign Substance
- Musty
- Sour
- Badly Weathered
- Stones
- Crotalaria
- Glass
- Castorbeans
- Cockleburs
- Animal Filth
- Total Other Material

Soybeans

Example: U.S. No. 3 Mixed Soybeans, Garlicky, Infested, Purple Mottled or Stained
Example: U.S. Sample Grade Yellow Soybeans

Factors:

- Damaged Kernels (Total)
- Heat-damaged Kernels
- Splits
- Foreign Material
- Total Other Material
- Commercially Objectionable Foreign Odor
- Musty
- Heating
- Sour
- Animal Filth
- Castorbeans
- Crotalaria
- Stones
- Unknown Foreign Substance

Barley

Example: U.S. No. 2 Six-rowed Malting Barley, Dockage 1.5%
Example: U.S. No. 2 Two-rowed Barley, Blighted, Ergoty, Garlicky, Infested, Smutty
Example: U.S. No. 3 Barley, Infested, Dockage 1.0%

Factors:

- Test Weight Per Bushel
- Sound Barley
- Suitable Malting Types
- Heat-damaged Kernels
- Wild Oats
- Foreign Material
- Skinned and Broken Kernels
- Commercially Objectionable Foreign Odor
- Sour
- Heating
- Unknown Foreign Substance
- Broken Kernels
- Damaged Kernels
- Other Grains
- Thin Barley
- Crotalaria
- Musty
- Stones
- Glass
- Castorbeans
- Cockleburs
- Animal Filth

Group B — Seed Analysis

1. Time — One and one-half hours. Value 600 points. (Ten samples - 60 points per sample.) (No more than 60 points may be deducted per sample.)

2. The samples will be selected from any pure cultivar of the following crops. Base sample weights will be as listed. No more than five base samples from small seeded crops listed below the line (base weight of 5 g or less) may be used in one contest.

Wt. in grams	Base Samples
100	large seeded legumes – soybean, cowpea, fieldpea, fieldbean, chickpea
50	small grains, lentil, rice, safflower, oil sunflower, grain sorghum, pop corn, hairy vetch
20	common buckwheat
15	flax, proso millet, annual canarygrass, pearl millet, daikon radish
5	crownvetch, foxtail millet, alfalfa, sweetclover, red clover, crimson clover, tall fescue, perennial ryegrass, smooth bromegrass, crested wheatgrass
2	white clover, alsike clover, birdsfoot trefoil, orchardgrass, switchgrass (w/o glumes)
1	Kentucky bluegrass, reed canarygrass, timothy, bermudagrass

3. The contestant must classify and name, according to common name only, all seeds mixed with the base sample. The classification shall be (a) other crops and/or varieties, (b) prohibited noxious weeds, (c) restricted noxious weeds, and (d) common weeds. (See the official form on page 29, rule 6 below, and restrictions on the identification list.)

4. In preparing samples, all admixtures will consist of four (4) or more mature, non-damaged, non-diseased seeds. Occasionally a single (1) contaminant seed may be present but will not be considered as an admixture. No single (1) contaminant seeds will be intentionally added to seed analysis samples. Contestants need not necessarily find these numbers to call an admixture, but it is their responsibility if they call an admixture but find less than four. Only impurities listed as permissible on the identification list may be used. Admixtures used in seed analysis must be in the same form as that acceptable for the identification phase of the contest.

5. Scoring system — The total score per sample shall be 60 points. The following points shall be allotted to each impurity for proper classification: Other crops and/or varieties, 1; prohibited noxious weeds, 3; restricted noxious weeds, 2; and common weeds, 1. The deduction shall be according to the category where it belongs rather than where the contestant has placed it. The remaining points shall be allotted equally, rounding to the nearest whole number, for the proper identification of the impurities. The term approximately is used in order that scoring can be done in whole points. (Subtract the total points allotted to classification from 60 and divide the remainder by the number of impurities present.) When less than 4 are present, 15 points (total for classification and identification) shall be allotted to each. This allows a maximum deduction of 15 points for an impurity not called, and 7 points for listing an impurity not present.

The contestant who calls an impurity which is not present (extras) shall be penalized approximately one-half of the points allotted 13 to the proper identification of an impuritypresent. If a contestant calls an impurity in a sample which contains none, 15 points shall be deducted for a score of 45 points. Two impurities called in a pure sample will cause a loss of 30 points, etc. In case of incorrect identification by the contestant, such as mistaking tall morningglory for field bindweed, the above rules allow two penalties on the total score; one for not calling field bindweed and another for calling tall morningglory as extra. One point will be deducted for wrongly written names. The following examples are wrongly written: The following examples are wrongly written: pepperweed vs. greenflower pepperweed, common cocklebur vs. cocklebur, yellow oat or oat vs. white oat, red oat vs. Red Rustproof oat. When multiple varieties or types are possible but the crop is not identified correctly (ie. smooth yellow fieldbean vs. smooth yellow fieldpea), the full deduction for missing plus an extra is taken, not -1 for wrongly written. When the variety or type is not called (ie. soybean vs. yellow hilum soybean, ragweed vs. giant ragweed), the full deduction for missing is taken, but no additional points for an extra. When two varieties or types are possible on the list, but the wrong one is called (black hilum soybean vs. yellow hilum soybean, common ragweed vs. giant ragweed), deduct points for both missing and for an extra. Correctly identified admixtures listed more than once will not be counted as others. Classification points will be deducted for all extra placements of a correctly identified admixture.

Calculating the Sample Score in Seed Analysis The total score for a Seed Analysis sample is 60 points. Points are allotted to each impurity as follows: other crops and/or varieties = 1; prohibited noxious weeds = 3; restricted noxious weeds = 2; and common weeds = 1. The deduction shall be according to category where it belongs rather than where the contestant places it. Spelling errors are not discounted.

Example: A wheat sample contains:

Crops and/or varieties	**Restricted noxious weeds**
white oat	white campion
flax	curly dock
barley	cheat
rye	oxeye daisy
Prohibited noxious weeds	**Common weeds**
quackgrass	rescuegrass
field bindweed	wild sunflower

Multiply each admixture by the number assigned for proper classification and add totals:

Other crops and/or varieties	= 4 x 1 = 4	
Prohibited noxious weeds	= 2 x 3 = 6	
Restricted noxious weeds	= 4 x 2 = 8	
Common weeds	= 2 x 1 = 2	
Totals	12	20

60 - 20 = 40 to be divided by number of admixtures (12). 40/12 = 3.3. Therefore, rounding down (3.3 = 3) gives the proper identification points for each admixture. Thus,

3 + 1 = 4 for Crops and/or other varieties
3 + 3 = 6 for Prohibited noxious weeds
3 + 2 = 5 for Restricted noxious weeds
3 + 1 = 4 for Common weeds

If remainder had been 0.5 or more, one must round up which would give 4 instead of 3. (Therefore, 5, 7, 6 and 5 respectively would be the total points for each admixture.)

"The contestant who calls an impurity which is not present shall be penalized approximately 1/2 of points allotted to proper identification of an impurity present." In this case the proper identification is worth 3.3 points. Therefore, calling an impurity which is not present we divide 3.3/2 = 1.65. Therefore, rounding up (1.65=2) gives the proper deduction for extras.

Seed Analysis
Special Rules

6. All admixtures shall be named according to common names exactly as printed in the identification list, with its restrictions, except as indicated in the special rules that follow:

A. **Wheat** — Base material shall be any pure sample of red wheat, white wheat, or durum wheat.
   (1) Red wheats will not be used as mixtures in red wheat or two or more will not be used as admixtures in other wheat samples or other crop samples.
   (2) No white wheat varieties will be used as mixtures in white wheat.
   (3) Wheat types used as admixtures in other wheats and other crops, where permissible, will be identified as red wheat, white wheat, amber durum wheat, einkorn, emmer, spelt.

B. **Oat** — Base material shall be any pure sample of ~~Red Rustproof type oat or~~ white oat (white or yellow) ~~or yellow oat~~. Only white oat and ~~Red Rustproof~~ black oat will be used as admixtures.
   (1) Gray oat, ~~black oat,~~ and hulled oat varieties will not be used as admixtures in oat samples or other crop samples.
   (2) Any variety of black oat used as ~~a base sample or~~ an admixture will not exhibit a ~~partial~~ sucker mouth~~, shall be identified as Red Rustproof oat. White oat will not be used as an admixture in yellow oat base sample.~~
   (3) ~~White oat and Red Rustproof oat may be used as an admixture in each other, and both~~ Both white oat and black oat may be used as admixture in other crops alone or together.
   (4) Wild oat, if used as an admixture, will contain some gray and/or black color and have a sucker mouth rachilla.

C. **Rye** — Base material shall be any pure sample of rye. Rye used as an admixture in other crops will be identified only as rye. Rye varieties or types will not be mixed in rye samples.

D. **Grain sorghums** — Base material shall be any pure cultivar of ~~non-tanin~~ grain sorghum (white, yellow, red, brown).
   (1) ~~Feterita will not be used in seed analysis. Hegari will be used as an admixture in grain sorghum base samples, but may be used in any other crop.~~ Any color of ~~non-tannin~~ grain sorghum may be found in other crops and will be identified as grain sorghum. ~~Both grain sorghum and hegari may be found together in other crops.~~
   (2) All sudangrass and sorgo must be shown in the glumes. All may be found in grain sorghum base samples or any other crop. (sumac sorgo is no longer an admixture)

E. **Flax** — Base material shall be any pure sample of flax.

F. **Barley** — Base material shall be any pure sample of barley except the hulless type.
   (1) Two-rowed and six-rowed barley will not be mixed.
   (2) Barley, when found as an admixture in any other crop sample, will be identified only as barley.
   (3) Hulless barley types are not allowed in seed analysis.

G. **Large-seeded legumes** — Base material shall be any pure sample of cowpea, soybean, chickpea, fieldbean, or fieldpea variety or type found on the identification list.

(1) Black and brown hilum soybean will not be used together in any combination but may be used singly in any other soybean type, other large-seeded legumes, or any other crop sample.
(2) Smooth green and wrinkled fieldpea will not be used together in any combination but may be used singly in Austrian Winter fieldpea, other large-seeded legumes, or any other crop sample. Smooth yellow fieldpea may be used in smooth green, wrinkled or Austrian winter fieldpea base samples or any other crop, and in combination with smooth green or wrinkled fieldpea.

H. **Small-seeded legumes and grasses** - Base material shall be any pure sample of alfalfa, red clover, sweetclover, alsike clover, white clover, birdsfoot trefoil, crownvetch crimson clover, reed canarygrass, timothy, tall fescue, perennial ryegrass, smooth bromegrass, orchardgrass, Kentucky bluegrass, crested wheatgrass, switchgrass, bermudagrass, annual canarygrass, foxtail millet, proso millet or pearl millet.

(1) The following will not be mixed in any combination:
(a) Black medic, alfalfa, and sweetclover;
(b) Alsike clover and white clover;
(c) Annual bluegrass and Kentucky bluegrass
(2) Perennial ryegrass will not be mixed in a base sample of tall fescue and vice versa.
(3) Crested wheatgrass will not be mixed in a base sample of orchardgrass and vice versa
(4) Timothy will not be mixed in a base sample of bermudagrass.

I. **Rice** — Base material shall be any pure sample of rice [in the hull].
(1) Long grain rice and short grain rice will not be mixed. When either is found as an admixture, the admixture will be identified as rice.

J. **Miscellaneous crops** — Base material shall be any pure sample of common buckwheat, lentil, safflower, oil sunflower, or daikon radish.
(1) Confectionary sunflowers will not be mixed in a base sample of oilseed sunflowers.
(2) Cultivated sunflowers found as admixtures in other crops will be identified as confectionary sunflower or oilseed sunflower.

K. **Special rules for other permissible admixtures.**
(1) Common vetch and hairy vetch will not be mixed. When either is found as an admixture, the admixture will be identified as vetch.

L. **Triticale** — No smooth seeded varieties will be used in seed analysis.

Group C — Identification

1. Time — one and one-half hours. Value 600 points. The number of samples in this section shall be 200.

2. Contestants will record only the common name for the contest.

3. The broad leaf plants exhibited must be in post bud, flower and/or fruiting stages and display at least one leaf unless otherwise specified. The flower color of alfalfa may range from blue, to purple, to white, to yellow, to variegated.

4. All crop plant specimens of *Triticum, Hordeum, Avena, Secale, Triticale, Oryza, Sorghum*, and all millets must be mature and all seed samples must be mature to be used in the contests. Grasses must have full extension of the inflorescence out of the flag leaf sheath.

5. The correct identification of each specimen shall be worth 3 points.

6. Correct spelling will be required as given in the identification list. The contestant will be cut two-tenths of one point for each sample with one or more misspelled words. Incorrect usage of capitals, hyphens, periods, commas, spaces between or within words shall be considered as misspelled.

   e.g. leaving hyphen (-) out of two-rowed barley

7. Common names which show proper identification but are improperly written shall be discounted one point as wrongly written. A common name can be wrongly written only once (i.e. Australian winter pea vs. Austrian winter fieldpea is only one writing error).

   e.g. morningglory instead of tall morningglory
   Canadian thistle instead of Canada thistle
   2-rowed barley instead of two-rowed barley

8. Names which show the incorrect crop or weed name will be considered incorrect and will be discounted 3 points.

   e.g. sorghum vs. sorgo
   yellow hilum bean vs. yellow hilum soybean
   purplehull fieldpea vs. purplehull cowpea
   hard red spring barley vs. hard red spring wheat
   field pennygrass vs. field pennycress
   black hilum vs. black hilum soybean
   amber durum vs. amber durum wheat

9. Disease samples will be labeled with the word "disease."

10. The canola plant specimen must have clasping upper leaves.

Identification List

Symbols: (s) seed only (b) both plant and seed shown
(p) plant only (e) either plant or seed or both shown

Common names must be written exactly as written below.

NOTE: Any variety, crop, or weed seed preceded by a double asterisk (**) cannot be used as an admixture in any seed analysis sample. Plant only items cannot be used in seed analysis.

1) Crop common and scientific names derived from: Glossary of Crop Science Terms, Crop Science Society of America, Madison, WI, (1992). https://www.crops.org/publications/crops-glossary

2) Plant disease common and scientific names derived from: Common Names for Plant Diseases, Committee on standardization of common names for plant diseases of the American Phytopathological Society 1978-1993, APS Press, (1994). http://www.apsnet.org/publications/commonnames

3) Weed common names to be used in the contest are determined by vote of the Coaches Committee and must be written by the contestant as listed below. Since most references refer to multiple common names for a given species, there is not an official list of common names that provide a suitable reference. Common names used are those found in the USDA Germplasm Resources Information Network (GRIN) or USDA PLANTS Database.

FIELD CROPS

1	hard red winter wheat	(s)	*Triticum aestivum ssp. aestivum*
2			*Triticum aestivum ssp. aestivum*
3			*Triticum aestivum ssp. aestivum*
4	soft red winter wheat	(s)	*Triticum aestivum ssp. aestivum*
5			*Triticum aestivum ssp. aestivum*
6	hard red spring wheat	(s)	*Triticum aestivum ssp. aestivum*
7			*Triticum aestivum ssp. aestivum*
8	hard white wheat	(s)	*Triticum aestivum ssp. aestivum*
9	soft white wheat	(s)	*Triticum aestivum ssp. aestivum*
10	wheat (common wheat different from amber durum, white club, einkorn, emmer and spelt	(p)	*Triticum aestivum ssp. aestivum*

11			
12	amber durum wheat	(s ~~or b~~)	*Triticum turgidum ssp. durum*
13**	white club wheat	(p)	*Triticum aestivum ssp. compactum*
14	einkorn	(e)	*Triticum monococcum*
15	emmer	(e)	*Triticum dicoccum*
16	spelt	(~~es or b~~)	*Triticum aestivum ssp. spelta*
17			
18			
19	rye	(e)	*Secale cereale*
20	triticale	(e)	*Triticosecale spp.*
21	long grain rice	(e)	*Oryza sativa*
22	short grain rice	(e)	*Oryza sativa*
23	wild rice	(s)	*Zizania aquatica*
24	dent corn	(s)	*Zea mays ssp. indentata* (more than 50 % dented kernels shown)
25	sweet corn	(s)	*Zea mays ssp. saccharata*
26	pop corn	(s)	*Zea mays ssp. everta*
28			
27	flint corn	(s)	*Zea mays ssp. indurata*
29	(removed Morex)		
30**	Nepal barley (may be any two-rowed or six-rowed hooded, hulless variety)	(e)	*Hordeum vulgare*
31	(removed Manker)		*Hordeum vulgare*
32	six-rowed barley	(e)	*Hordeum vulgare*
33	two-rowed barley	(e)	*Hordeum distichon*
34	white oat	(s)	*Avena sativa*
35	(white or yellow) ~~yellow oat~~	(~~s~~)	~~*Avena sativa*~~

36	~~Red Rustproof~~ black oat	(s)	*Avena ~~byzantine~~ strigosa*
37**	hull-less oat	(s)	*Avena nuda*
38	oat	(p)	*Avena sativa*
101	grain sorghum (can be any tannin or non-tannin type)	(e)	*Sorghum bicolor*
102			*Sorghum bicolor*
103	~~hegari~~	(~~s~~)	~~*Sorghum bicolor*~~
104**	~~feterita~~	(~~s~~)	~~*Sorghum bicolor*~~
105			
106	black amber sorgo	(e)	*Sorghum bicolor*
107	honey sorgo	(e)	*Sorghum bicolor*
108			
109	sumac sorgo	(p)	*Sorghum bicolor*
110	broomcorn	(p)	*Sorghum bicolor*
111			
112	Sweet sudangrass	(e)	*Sorghum bicolor var. sudanense*
201	big bluestem	(p)	*Andropogon gerardi*
202	little bluestem	(p)	*Schizachyrium scoparium*
203	blue grama	(p)	*Bouteloua gracilis*
204	sideoats grama	(p)	*Bouteloua curtipendula*
205**	buffalograss	(p or bur)	*Bouteloua dactyloides*
206	Canada wildrye	(p)	*Elymus canadensis*
207	Russian wildrye	(p)	*Psathyrostachys junceus*
208	Indiangrass	(p)	*Sorghastrum nutans*
209	sand lovegrass	(e)	*Eragrostis trichodes*

210	switchgrass	(e)	*Panicum virgatum*
211	crested wheatgrass	(e)	*Agropyron cristatum*
212	bermudagrass	(e)	*Cynodon dactylon*
213			
214	Kentucky bluegrass	(e)	*Poa pratensis*
215			
216	dallisgrass	(e)	*Paspalum dilatatum*
217	orchardgrass	(e)	*Dactylis glomerata*
218	perennial ryegrass	(e)	*Lolium perenne*
219	bentgrass	(e)	*Agrostis spp.*
220	reed canarygrass	(e)	*Phalaris arundinacea*
221	rhodesgrass	(e)	*Chloris gayana*
222	smooth bromegrass	(e)	*Bromus inermis*
223	tall fescue	(e)	*Festuca arundinacea*
224			
225	timothy	(e)	*Phleum pratense*
226	foxtail millet	(e)	*Setaria italica*
227	proso millet	(e)	*Panicum miliaceum*
228	pearl millet	(e)	*Pennisetum glaucum*
229	annual canarygrass	(s)	*Phalaris canariensis*
301	alfalfa	(e)	*Medicago sativa*
302	sweetclover	(e)	*Melilotus spp.*
303	arrowleaf clover	(p)	*Trifolium vesiculosum*
304	alsike clover	(e)	*Trifolium hybridum*
305	large hop clover	(e)	*Trifolium campestre*

306	crimson clover	(e)	*Trifolium incarnatum*
307	red clover	(e)	*Trifolium pratense*
308	white clover	(e)	*Trifolium repens*
309			
310	birdsfoot trefoil	(e)	*Lotus corniculatus*
311	Korean lespedeza	(e)	*Kummerowia stipulacea*
312	crownvetch	(e)	*Coronilla varia*
313	sainfoin	(e)	*Onobrychis viciifolia*
314			
315	common vetch	(e)	*Vicia sativa*
316	hairy vetch	(e)	*Vicia villosa*
400	black turtle fieldbean	(s)	*Phaseolus vulgaris*
401	blackeye cowpea	(s)	*Vigna unguiculata*
402	Iron Clay cowpea	(s)	*Vigna unguiculata*
403	purplehull cowpea	(s)	*Vigna unguiculata* (must be purple/pink eye type)
403 b	cowpea	(p)	*Vigna unguiculata*
404	great northern fieldbean	(s)	*Phaseolus vulgaris*
405	navy fieldbean	(s)	*Phaseolus vulgaris*
406	pinto fieldbean	(s)	*Phaseolus vulgaris*
407	red kidney fieldbean	(s)	*Phaseolus vulgaris*
407 b	fieldbean	(p)	*Phaseolus vulgaris*
408	green mungbean	(e)	*Vigna radiata*
409	smooth green fieldpea	(s)	*Pisum sativum*
410	Austrian winter fieldpea	(s)	*Pisum sativum*
411	smooth yellow fieldpea	(s)	*Pisum sativum*

412	wrinkled fieldpea	(s)	*Pisum sativum*
412 b	fieldpea	(p)	*Pisum sativum*
413	black hilum soybean	(s)	*Glycine max*
414	yellow hilum soybean	(s)	*Glycine max*
415	brown hilum soybean	(s)	*Glycine max*
416	black soybean	(s)	*Glycine max*
417	brown soybean	(s)	*Glycine max*
417 b	soybean	(p)	*Glycine max*
418	Spanish peanut	(pod)	*Arachis hypogaea*
419	Valencia peanut	(pod)	*Arachis hypogaea*
419 b	peanut	(p)	*Arachis hypogaea*
420	chickpea	(s)	
421	white lupine	(s)	*Lupinus albus*
422			
423	lentil	(s)	*Lens culinaris*
501	common buckwheat	(e)	*Fagopyrum esculentum*
502	castor	(s)	*Ricinus communis*
503**	Egyptian cotton	(s)	*Gossypium barbadense*
504**	upland cotton	(s)	*Gossypium hirsutum*
504 b	cotton	(p) ~~(okra leaf type disallowed)~~	
505	yellow mustard	(s)	*Brassica hirta*
506	flax	(e)	*Linum usitatissimum*
507	hop	(p)	*Humulus lupulus*
508	crambe	(e)	*Crambe abyssinica*
509	safflower	(e)	*Carthamus tinctorius*

510	sesame	(e)	*Sesamum indicum*
511	sugarbeet	(s)	*Beta vulgaris*
512	tobacco	(s)	*Nicotiana tabacum*
513	confectionary sunflower	(s)	*Helianthus annuus*
514	oilseed sunflower	(s)	*Helianthus annuus*
515	guar	(e)	*Cyamopsis tetragonoloba*
516	crotalaria	(s)	*Crotalaria spp.*
517**	canola	(e)	*Brassica napus*
518.	daikon radish	(s)	*Raphanus sativus ssp. longipinnatus*

CROP DISEASES

603	common bean blight	(s)	*Xanthomonas campestris pv. phaseoli* (fieldbean only)
604	black point of wheat	(s)	*Fusarium spp.*
608	common bunt	(s)	*Tilletia caries, Tilletia foetida*
609	ergot	(e)	*Claviceps purpurea*
610	common corn smut	(p)	*Ustilago maydis*
613	loose smut*	(p)	*Ustilago tritici*
614	purple stain of soybean	(s)	*Cercospora kikuchii*
617	wheat scab	(s)	*Gibberella zeae*
620	Phomopsis seed rot	(s)	*Phomopsis spp.* (soybean only)

~~*Shall have a non-diseased head shown with diseased specimen.~~

WEEDS

NOTE: Identification includes either plant, seed or both, unless otherwise indicated.

The following criteria were used to classify a weed as prohibited, restricted, or common (excluding Alaska and Hawaii):

Prohibited — must be classified as prohibited by two or more states.

Restricted — classified as restricted by two or more states or classified as prohibited by one state and restricted by another state.

Prohibited Noxious Weeds

701	quackgrass		*Elymus repens (Elytrigia repens)*
702	johnsongrass		*Sorghum halepense*
703	hoary cress		*Cardaria draba*
704	leafy spurge		*Euphorbia esula*
705	field bindweed		*Convolvulus arvensis*
706	dodder [1/]		*Cuscuta spp.*
707	Canada thistle		*Cirsium arvense*
708	Russian knapweed		*Acroptilon repens*
709	perennial sowthistle		*Sonchus arvensis*
710	jointed goatgrass		*Aegilops cylindrica*
711	bull thistle	(p)	*Cirsium vulgare*
712	wild garlic	(p or bulblets)	*Allium vineale*
713			
714	St. Johnswort	(p)	*Hypericum perforatum*
715	tall morningglory		*Ipomoea purpurea*
716	hedge bindweed	(p)	*Calystegia sepium*
717	horsenettle		*Solanum carolinense*
718	silverleaf nightshade	(p)	*Solanum elaeagnifolium*
719	cocklebur		*Xanthium spp.*
720	spotted knapweed		*Centaurea stoebe*

[1/] Dodder may be allowed on any plant and shall be called regardless of the plant on which it is found. The dodder must represent at least 25% of the identification specimen.

Restricted Noxious Weeds

801	cheat		*Bromus secalinus*
802	wild oat		*Avena fatua*
803	large crabgrass		*Digitaria sanguinalis*
804**	yellow nutsedge	(p or nutlets)	*Cyperus esculentus*
805	curly dock		*Rumex crispus*
806	red sorrel		*Rumex acetosella*
807	Russian thistle		*Salsola tragus*
808	white campion		*Silene latifolia ssp. alba*
809	field pennycress		*Thlaspi arvense*
810	wild mustard		*Sinapis arvensis*
811	puncturevine		*Tribulus terrestris*
812	wild carrot		*Daucus carota (Daucus pusillus)*
813	blackseed plantain		*Plantago rugelii*
814	buckhorn plantain		*Plantago lanceolata*
815	bracted plantain		*Plantago aristata*
816	oxeye daisy		*Leucanthemum vulgare*
817	eastern black nightshade		*Solanum ptycanthum*
818	annual bluegrass	(s)	*Poa annua*
819	sericea lespedeza	(p)	*Lespedeza cuneata*

Common Weeds

901	rescuegrass		*Bromus catharticus*
902	goosegrass	(p)	*Eleusine indica*
903	barnyardgrass		*Echinochloa crus-galli*
904	yellow foxtail		*Setaria pumila*
905	green foxtail		*Setaria viridis*
906	kochia		*Kochia scoparia*

907	common lambsquarters		*Chenopodium album*
908	redroot pigweed		*Amaranthus retroflexus*
909	chickweed		*Stellaria spp.*
910	greenflower pepperweed		*Lepidium densiflorum*
911	shepherdspurse		*Capsella bursa-pastoris*
912	black medic		*Medicago lupulina*
913	giant ragweed		*Ambrosia trifida*
914	common ragweed		*Ambrosia artemisiifolia*
915	wild sunflower		*Helianthus annuus*
916	chicory		*Cichorium intybus*
917	dandelion		*Taraxacum officinale*
918	downy brome		*Bromus tectorum*
919	foxtail barley	(p)	*Hordeum jubatum*
920	little barley		*Hordeum pusillum*
921	prostrate knotweed	(p)	*Polygonum aviculare*
922	Pennsylvania smartweed		*Polygonum pensylvanicum*
923	wild buckwheat		*Polygonum convolulus*
924	pinnate tansymustard	(p)	*Descurainia pinnata*
925	velvetleaf		*Abutilon theophrasti*
926	buffalobur		*Solanum rostratum*
927	common burdock		*Arctium minus*
928	jimsonweed		*Datura stramonium*
929	Venice mallow		*Hibiscus trionum*
930	henbit		*Lamium amplexicaule*
931	prickly sida		*Sida spinosa*
932	woolly cupgrass		*Eriochloa villosa*
933	horseweed	(p)	*Conyza canadensis*
934	Palmer amaranth	(p)	*Amaranthus palmeri*
935	kudzu (stems	& leaves)	*Pueraria montana*

Historic Varieties

Several varieties or types listed in the identification list are included because of their distinctive morphological characteristics.

Named varieties and types include:

einkorn

emmer

spelt

Nepal barley

~~Red Rustproof oat~~

sumac sorgo

black amber sorgo

honey sorgo

Sweet sudangrass

~~hegari~~

~~feterita~~

Iron Clay cowpea

Austrian winter fieldpea

Representative or historic varieties contain unique characteristics important in identification but are no longer listed specifically in the identification list as of 2024:

The descriptions are provided as a cross-reference for old practice samples

Karl 92 wheat - White glumes, awned, hard red winter class ("92" means a new Karl released in 1992)

TAM 107 wheat – red glumes, awned, hard red winter class ("TAM" means Texas A&M variety)

Longhorn wheat – white glumes, awnless, hard red winter class

Goldfield wheat – white glumes, awnless, soft red winter class

Hopewell wheat – red glumes, awnless, soft red winter class

Marshall wheat – white glumes, awned, hard red spring class

Thatcher wheat – white glumes, awnless, hard red spring class

Arlin wheat – white glumes, awned, hard white class

Federation wheat - red glumes, awnless, soft white class/soft white subclass

Twin wheat – white glumes, awnless, soft white class/soft white subclass

Paha wheat – club type head, soft white class/white club subclass

L-205 rice – long grain rice (California variety, “L” means long grain, "2" means early maturity)

S-102 rice – short grain rice (California variety, “S” means short grain, "1" means very early maturity)

Morex barley – six-rowed barley, smooth awns

Manker barley – six-rowed barley, rough awns

Red Rustproof oat -

Streaker oat – hull-less oat; free-threshing “naked” seed

Hegari and feterita - white sorghums with blue subcoats

Combine kafir – white non-tannin seed (kafirs were early open-pollinated varieties introduced to US)

Dwarf Yellow milo – red non-tannin seed (milos were early open-pollinated varieties introduced US)

Umatilla fieldpea – smooth yellow fieldpea, named after the research station where it was developed.

Alaska 81 fieldpea – smooth green fieldpea

Perfection fieldpea – wrinkled fieldpea

Flyer soybean – black hilum soybean, yellow class

Corsoy soybean – yellow hilum soybean, yellow class

KS 4694 soybean – brown hilum soybean, yellow class (“KS 4694” means Kansas State variety, maturity group 4.6, released in 1994)

Laredo soybean – black seed coat, soybeans of other colors class (an early forage type variety)

Virginia soybean – brown seed coat, soybeans of other colors class

Mingren sunflower – confectionary variety

Peredovik sunflower – oilseed variety

Lodi oat and Centinial oat are now white oat

Orange sorgo, Polish wheat and Canada bluegrass all removed prior to 2018

Brabham cowpea replaced with Iron Clay cowpea

CORN

Contestant No. _____

Sample No. _____

Notes

Factor	TW	HT	DKT	BCFM
Level				
Grade (3 pts.)				

Complete Grade Designation	Factor or Factors for Determination Grade

SORGHUM

Sample No. _____

Notes

Factor	TW	HT	DKT	FM	BNFM
Level					
Grade (3 pts.)					

Complete Grade Designation	Factor or Factors for Determination Grade

SOYBEANS

Contestant No. _____

Sample No. _____

Notes

Factor	HT	DKT	FM	SPL
Level				
Grade (3 pts.)				

Complete Grade Designation	Factor or Factors for Determination Grade

OATS

Sample No. _____

Notes

Factor	TW	SO	HT	FM	WO
Level					
Grade (3 pts.)					

Complete Grade Designation	Factor or Factors for Determination Grade

WHEAT

Contestant No. _____

Sample No. _____

Notes

Factor	TW	HT	DKT	FM	SHBN	DEF	CCL	WOCL
Level								
Grade (3 pts.)								

Complete Grade Designation	Factor or Factors for Determination Grade

RYE

Sample No. _____

Notes

Factor	TW	FMOW	FM	HT	DKT	THIN
Level						
Grade (3 pts.)						

Complete Grade Designation	Factor or Factors for Determination Grade

Contestant No. _____

BARLEY

Sample No. _____

SIX-ROWED MALTING BARLEY

Notes

Factor	TW	SMT	SBLY	DK	WO	FM	OG	SKBN	THIN
Level									
Grade (3 pts.)									

TWO-ROWED MALTING BARLEY

Factor	TW	SMT	SBLY	DK	WO	FM	OG	SKBN	THIN
Level									
Grade (3 pts.)									

NON-MALTING BARLEY

Factor	TW	SBLY	DK	HT	FM	BN	THIN
Level							
Grade (3 pts.)							

Complete Grade Designation	Factor or Factors for Determination Grade

Official Form — Collegiate Crops Contest
Seed Analysis

Contestant No. _____ Total Score _____

Sample No. _____ Sample Name _____

A. Other Crops and/or Varieties	C. Restricted Noxious Weeds
B. Prohibited Noxious Weeds	D. Common Weeds

Official Form — Collegiate Crops Contest Identification

Contestant No. _____ Total Score _____

Sample Number	Name	Sample Number	Name
1.		26.	
2.		27.	
3.		28.	
4.		29.	
5.		30.	
6.		31.	
7.		32.	
8.		33.	
9.		34.	
10.		35.	
11.		36.	
12.		37.	
13.		38.	
14.		39.	
15.		40.	
16.		41.	
17.		42.	
18.		43.	
19.		44.	
20.		45.	
21.		46.	
22.		47.	
23.		48.	
24.		49.	
25.		50.	

_____ x -3 = _____ _____ x -1 = _____ _____ x -0.2 = _____ Total = _____

Official Form — Collegiate Crops Contest Identification

Contestant No. _____ Total Score _____

Sample Number	Name	Sample Number	Name
51.		76.	
52.		77.	
53.		78.	
54.		79.	
55.		80.	
56.		81.	
57.		82.	
58.		83.	
59.		84.	
60.		85.	
61.		86.	
62.		87.	
63.		88.	
64.		89.	
65.		90.	
66.		91.	
67.		92.	
68.		93.	
69.		94.	
70.		95.	
71.		96.	
72.		97.	
73.		98.	
74.		99.	
75.		100.	

_____ x -3 = _____ _____ x -1 = _____ _____ x -0.2 = _____ Total = _____

Official Form — Collegiate Crops Contest Identification

Contestant No. _____ Total Score _____

Sample Number	Name	Sample Number	Name
101.		126.	
102.		127.	
103.		128.	
104.		129.	
105.		130.	
106.		131.	
107.		132.	
108.		133.	
109.		134.	
110.		135.	
111.		136.	
112.		137.	
113.		138.	
114.		139.	
115.		140.	
116.		141.	
117.		142.	
118.		143.	
119.		144.	
120.		145.	
121.		146.	
122.		147.	
123.		148.	
124.		149.	
125.		150.	

_____ x -3 = _____ _____ x -1 = _____ _____ x -0.2 = _____ Total = _____

Official Form — Collegiate Crops Contest Identification

Contestant No. _____ Total Score _____

Sample Number	Name	Sample Number	Name
151.		176.	
152.		177.	
153.		178.	
154.		179.	
155.		180.	
156.		181.	
157.		182.	
158.		183.	
159.		184.	
160.		185.	
161.		186.	
162.		187.	
163.		188.	
164.		189.	
165.		190.	
166.		191.	
167.		192.	
168.		193.	
169.		194.	
170.		195.	
171.		196.	
172.		197.	
173.		198.	
174.		199.	
175.		200.	

_____ x -3 = _____ _____ x -1 = _____ _____ x -0.2 = _____ Total = _____

COLLEGIATE CROPS CONTEST

SCHOOL	CONTESTANT	COMMERICAL GRADING										SEED ANALYSIS												IDENTIFI-CATION		GRAND TOTAL SCORE	INDIVIDUAL RANK	TEAM RANK
		1	2	3	4	5	6	7	8	TOTAL SCORE	RANK	1	2	3	4	5	6	7	8	9	10	TOTAL SCORE	RANK	TOTAL SCORE	RANK			
A	1																											
	2																											
	3																											
B	1																											
	2																											
	3																											
C	1																											
	2																											
	3																											
D	1																											
	2																											
	3																											
E	1																											
	2																											
	3																											
F	1																											
	2																											
	3																											
G	1																											
	2																											
	3																											
H	1																											
	2																											
	3																											
I	1																											
	2																											
	3																											
J	1																											
	2																											
	3																											

Base Samples/Admixtures for 2017 Contests

Seed Analysis:

Please send the requested amounts of item, if requested, to Brent Turnipseed, Attn: Crops Judging, Seed Testing Lab, South Dakota State University, PO Box 2207-A, Brookings, SD 57006, at your earliest convenience, but no later than April 30. If you cannot provide any of those assigned, please contact Brent so we can secure them from another source.

Base Samples Needed: Each coach is asked to provide at least three clean base samples. Amount required is 450 g for grasses and legumes, 4500 g for small grains and sorghum, and 9000 g for fieldbeans and fieldpeas.

Admixtures Needed: As requested by Brent Turnipseed. He will contact coaches as listed on the exchange list.

Grain Grading:

Grain Grading Base Sample Assignments. These are due June 1 each year. Send clean, undamaged samples for both Kansas City and Chicago contests to the Technology and Science Division Office at the National Grain Center in Kansas City. Also, please send any good, uniform damaged kernels of any crops that you may have available for admixtures. See shipping addresses on last page of the rule book.

Crop	**Kansas City**	**Chicago**
Oats (1500 gm)	UMC	Wisconsin
Barley (1500 gm)	UMC	Wisconsin
Rye (1500 gm)	Wisconsin	OSU
Sorghum (1500 gm)	KSU	OSU
Soybeans (4500 gm)	Wisconsin	Iowa State
Corn (9000 gm)	Iowa State	Iowa State (white)
Hard red winter wheat (1500 gm)	KSU	OSU
Hard red spring wheat (1500 gm)	SDSU	UMC
Soft red winter wheat (1500 gm)	Virginia Tech	Wisconsin
Durum wheat (1500 gm)	SDSU	UMC
Hard white wheat (1500 gm)	KSU	OSU
Soft white wheat (1500 gm)	KSU	SDSU

Contest Forms Needed:

45 sets per contest (seed analysis and identification) - The Vice President is responsible for bringing copies.

Exchange List – Collegiate Crops Contests

Numbers correspond to specimens on the identification list.

Kansas State: 1, 2, 3, 8, 14, 16, 19, 20, 101, 102, 103, 104, 106, 107, 108, 109, 110, 112, 201, 202, 203, 204, 205, 206, 208, 209, 210, 211, 212, 213, 214, 217, 218, 220, 222, 223, 225, 226, 227, 228, 229, 301, 302, 307, 308, 310, 311, 312, 313, 316, 408, 412, 413, 414, 415, 418, 423, 501, 502, 506, 508, 509, 510, 513, 514, 515, 516, 517, 604, 606, 607, 613, 614, 617, 701, 702, 705, 710, 714, 715, 716, 717, 718, 719, 801, 803, 804, 805, 807, 809, 811, 816, 817, 819, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 933, 934.

Purdue: 4, 24, 25, 26, 201, 202, 214, 217, 218, 219, 220, 222, 223, 225, 301, 302, 303, 304, 307, 308, 310, 311, 312, 414, 508, 610, 701, 707, 712, 713, 716, 717, 719, 803, 806, 809, 812, 813, 814, 816, 902, 903, 904, 905, 907, 908, 909, 911, 912, 913, 914, 916, 917, 918, 919, 925, 927, 928.

Minnesota - Crookston: 6, 12, 24, 29, 31, 32, 201, 202, 214, 220, 225, 229, 302, 304, 307, 310, 501, 505, 506, 513, 514, 517, 605, 609, 611, 612, 613, 701, 704, 707, 709, 719, 802, 805, 808, 809, 810, 813, 903, 904, 905, 906, 907, 908, 909, 911, 912, 915, 917, 919, 921, 922, 923, 927.

Iowa State: 24, 25, 26, 201, 202, 208, 210, 214, 217, 220, 222, 225, 301, 302, 307, 308, 310, 413, 414, 610, 614, 618, 701, 707, 716, 719, 803, 805, 813, 903, 904, 905, 907, 908, 913, 914, 917, 918, 921, 922, 925.

South Dakota State: 6, 7, 12, 14, 15, 19, 20, 24, 27, 29, 31, 32, 33, 34, 35, 37, 202, 203, 204, 205, 210, 211, 214, 217, 219, 220, 222, 225, 226, 227, 301, 302, 307, 308, 310, 313, 414, 505, 506, 508, 509, 514, 606, 607, 617, 701, 704, 705, 707, 709, 716, 719, 802, 803, 807, 809, 810, 813, 816, 903, 904, 905, 906, 907, 908, 910, 911, 912, 913, 914, 915, 917, 918, 919, 923, 925, 926, 929, 930.

Wisconsin - Platteville: 5,13, 19, 24, 25, 26, 32, 34, 35, 201, 202, 206, 208, 210, 214, 217, 218, 219, 220, 222, 225, 301, 302, 304, 307, 310, 312, 316, 400, 406, 407, 409, 412, 423, 507, 514, 516, 603, 607, 609, 611, 612, 614, 617, 618, 619, 701, 704, 705, 707, 709, 711, 714, 716, 717, 719, 803, 804, 805, 806, 808, 809, 812, 817, 902, 903, 904, 905, 907, 908, 911, 913, 914, 917, 922, 923, 925, 927, 928, 932.

Minnesota - St. Paul: 6, 7, 11, 12, 14, 15, 16, 18, 23, 24, 25, 26, 27, 29, 30, 31, 32, 34, 35, 37, 201, 202, 207, 211, 213, 214, 217, 218, 219, 220, 222, 223, 229, 301, 302, 304, 305, 307, 308, 310, 313, 405, 501, 506, 511, 513, 514, 517, 601, 603, 604, 605, 606, 607, 609, 610, 611, 612, 613, 617, 640, 701, 704, 707, 709, 716, 802, 803, 808, 809, 810, 813, 816, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 917, 918, 919, 921, 922, 923, 925, 927.

Oklahoma State: 2, 19, 24, 25, 26, 109, 201, 202, 203, 204, 205, 206, 208, 210, 212, 216, 221, 223, 228, 301, 302, 303, 308, 311, 315, 316, 408, 410, 418, 504, 614, 702, 706, 710, 713 (seed), 718, 719, 801, 804, 805, 811, 815, 901, 902, 903, 904, 905, 907, 908, 913, 917, 918, 920, 922, 923, 926, 929.

Virginia Tech: 210, 212, 214, 216, 217, 218, 220, 222, 223, 225, 301, 302, 304, 305, 306, 307, 308, 310, 311, 312, 314, 315, 316, 401, 405, 406, 419, 423, 504, 512, 701, 702, 705, 715, 716, 717, 719, 803, 804, 805, 806, 809, 812, 813, 814, 815, 901, 902, 903, 904, 905, 906, 907, 908, 909, 911, 913, 914, 916, 917, 921, 922, 925, 927, 928, 930.

Colorado State University: 2, 14, 15, 16, 19, 29, 33, 201, 202, 203, 204, 205, 206, 207, 208, 211, 217, 218, 222, 226, 227, 228, 301, 302, 307, 308, 310, 313, 404, 509, 603, 703, 704, 705, 706, 707, 708, 710, 717, 719, 802, 805, 806, 807, 812, 906, 908, 911, 915, 916, 917, 918, 919, 921, 922, 923, 924, 928, 929.

Schools with new teams that attend the national contest may take home all of the identification.

Booklet Updates for 2024 Contests

Page Update

2……....Regional contest details are TBD.

3.....Updated sponsors, dates, and details of Kansas City contest.

4.....Updated sponsors, dates, and details of Chicago contest.

7.....Grain Grading. Special rule 4. Suspended because damages will be separated and weights or percentages given. Therefore, the 1/4 from the line rule will not apply and damages presented will not be repeated in the givens. Hard and vitreous kernels will be provided if applicable.

13……..Seed Analysis. Section 4. four (4) or more mature seeds must be non-damaged, non-diseased

16……..Seed Analysis. Section 6B. Changes to oat based on removal of Red Rustproof type, addition of black oat, and elimination of seperate white oat and yellow oat identification samples.
Seed Analysis. Section 6D. Clarification of all grain sorghum being identified as such.
Sumac sorgo is no longer an admixture.

17……..Seed Analysis. Section 6 G-L. Corrected spelling errors in red clover and confectionary sunflower.

20.....Identification. See specific changes in identification names.
amber durum wheat is seed only
spelt can be either (plant is now allowed without seed)
removed yellow oat, yellow or white oat will be called white oat

21.....Identification.
replaced Red Rustproof oat with black oat
grain sorghum can be any tannin or non-tannin type
removed hegari and feterita

24.....Identification. Okra leaf type cotton is allowed.

26.....Crop Diseases. Loose smut does not require a non-diseased head since crop is not part of the name.

28.....Restricted Noxious Weeds. Add nutlets to yellow nutsedge. Nutlets will not be allowed in seed analysis

31.....Historic Varieties and Types – Changes in list reflect identification list changes.

42-43.....Propose removing these for next year. The only statement that is followed is "Schools with new teams that attend the national contest may take home all of the identification." This statement can be added either the general rules or coaches list.

45-48.....Contacts and coaches updated.

49.....Draft of requested scoring system for Grain Grading Score Cards which does not change any of the rules but reorders the existing rules on page 9 to the order of the score card.

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**send base samples for both KC and Chicago to Kansas City address above*

Chicago Grain Grading
**send samples for Chicago to Kansas City*

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Scoring System for Grain Grading Score Cards (75 points each)

Table Factors – minus 3 points for each wrong box. Recorded by placing appropriate numerical grade in "Grade Box" at the bottom of each factor column on the answer card. All boxes must be filled in with appropriate grade, including number 1. Each box will be scored as correct or incorrect against the grade level on the key. The number of grades off does not matter. Area marked "Level" is for contestant to record data and make calculations. It will not be scored. Record sample grade factors as "SG," "Sample," or "Sample Grade." For grading factors disregarded if Mixed class (ie. SBOC, CCL, WOCL) record "N/A", "X", leave blank, or write "Mixed" in box. For WOCL in Durum wheat, record "N/A", "X", or leave blank.

Complete Grade Designation

Grade		-10 for each grade off (max -30). Numerical grade must be written in grade designation area on answer card (if numerical grade is omitted but is correct in table -10; if numerical grade is omitted but one grade off in table -20)
Crop	Omitted	-5
Class	Wrong	-10 (except -5 for Durum Wheat, Hard Red Spring Wheat, and Barley)
Subclass	Wrong	-5 (applies to Durum Wheat, Hard Red Spring Wheat, and Barley)

- Special grades deduct 5 points for each one omitted or wrongly added.
- Deduct 5 point is Flint Corn % not listed (i.e. Flint and Dent, Flint Corn 7%) (round to whole number)
- Dockage deduct 5 points if omitted or wrong value. If dockage is 0.0% don't list for all crops except wheat and rye. If listed, deduct one point. For wheat and rye a measurable amount of dockage which rounds to 0.0% is listed as 0.0%. If not listed, deduct one point.
- When Light Garlicky is stated for Garlicky, or Light Smutty for Smutty, deduct only 5 points.
- Improper order of special grades (not alphabetical), deduct a maximum of 2 points.
- Special grades or dockage wrongly written, deduct 1 point for each infraction.

Factors for Determination Grade - Must be written out (or use official FGIS standard abbreviations) in the determining factors area on answer card.

One factor	1 Wrong -24 2			
Two factors	Wrong -24 3	1 Wrong -12 2		
Three factors	Wrong -24 4	Wrong -16 3	1 Wrong -8 2	
Four factors	Wrong -24	Wrong -18	Wrong -12	1 Wrong -6

When more factors are given than are actual, score on the basis of number of factors given by the contestant. For example, if four factors are given by the contestant but two are actual, deduct 12. Standard abbreviations for table factors are listed below*. Official abbreviations for sample grade and appearance factors may also be used (ANFL, BADW, CBUR, COFO, FSUB, HTG, IDK, SLW, TOM, etc.).

*STANDARD ABBREVIATIONS FOR DETERMINING FACTORS ALLOWED ON SCORE CARDS

BCFM	Broken Corn and Foreign Material	SBLY	Sound Barley
BN	Broken Kernels	SHBN	Shrunken and Broken Kernels
BNFM	Broken Kernels and Foreign Material	SKBN	Skinned and Broken Kernels
CCL	Contrasting Classes	SO	Sound Oats
DEF	Defects (Total)	SPL	Splits
DK	Damaged Kernels	SMT	Suitable Malting Types
DKT	Damaged Kernels (Total)	THIN	Thin Barley, Thin Rye
FM	Foreign Material	TW	Test Weight Per Bushel Wild
FMOW	Foreign Matter Other Than Wheat	WO	Oats
HT	Heat-damaged Kernels	WOCL	Wheat of Other Classes
OG	Other Grains		

Official abbreviations for any sample grade factors and any other grade determining appearance factors may also be used, but must be written exactly per FGIS standards.

- Incorrectly written determining factors, deduct 1 point for each factor.
- No deduction is made with regard to the order of writing numerical and sample grade determining factors.
- For samples grading U.S. No. 1, the correct determining factor is "None" or the box is left blank.

Additional Deductions: Incorrectly written grade (commas, abbreviations, capitalization errors), deduct 1 point for each infraction (maximum of 2 points).